

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte PAUL VINCENT EVANS,
THEODOR ROTTWINKEL and
JEREMY MARK BROWN

Appeal 2006-3308
Application 10/726,181
Technology Center 1700

Decided: February 26, 2007

Before CHUNG K. PAK, JEFFREY T. SMITH, and LINDA M.
GAUDETTE, *Administrative Patent Judges*.

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DECISION ON APPEAL

This is an appeal from the Examiner's final rejection of claims 19-26, the only claims pending in this application. We have jurisdiction over the appeal pursuant to 35 U.S.C. § 6(b)(2006).

Appellants' invention relates to a method of producing an aluminum lithographic sheet from direct chill (DC) cast ingot. According to Appellants, they have discovered that when aluminum alloy melt is prepared

without the addition of grain refiners, formation of the detrimental fir tree structure is avoided and it is possible to DC cast ingots at higher casting speeds. Claim 19, the sole independent claim, is illustrative of the invention:

19. A method of producing an aluminum lithographic sheet which method comprises:

a) providing a molten body of an aluminum alloy of composition in wt%:

Si 0.05 - 0.20

Fe 0.25 - 0.40

Others up to 0.05 each and up to 0.15 total

Al balance

wherein the aluminum alloy melt is prepared without the addition of grain refiners,

b) optionally degassing the molten body,

c) direct chill (DC) casting the molten body to form a cast ingot,

d) rolling the ingot to sheet,

e) electrograining the rolled sheet.

The Examiner relies on the following prior art references to show unpatentability:

Brusethang, "The Effect of Process Parameters on the Fir-Tree Structure in DC-Cast Rolling Ingots," 472-476 (1997).

Sawada

US 5,711,827

Jan. 27, 1998

The Examiner has rejected claims 19-26 under 35 U.S.C § 103(a) as unpatentable over Brusethaug in view of Sawada.

ISSUES

The Examiner contends that it would have been obvious to one of ordinary skill in the art at the time of the invention to have used the grain-refiner-free ingot of Brusethaug in the process of Sawada. Appellants contend that Brusethaug teaches away from using its grain refiner-free ingot to produce a lithographic sheet. Appellants further contend that Sawada teaches away from using an alloy having an Fe content above 0.20 weight % in its process for forming a lithographic sheet. The issue before us is whether the Examiner has properly identified a motivation, teaching or suggestion in the prior art to combine the teachings of Brusethaug and Sawada.

FINDINGS OF FACT

- 1) Brusethaug reports "work on the appearance of the fir-tree structure and its dependence upon casting conditions and alloy composition." (p. 472, col. 1, third para.).

- 2) Brusethaug states that a goal is “to eliminate the fir-tree structure, or at least to keep the zone width consistently smaller than the scalping depth.” (p. 472, col. 2, first para.).
- 3) According to Brusethaug, “[s]ince the nucleation and growth of Al Fe require high cooling rates formation of the fir-tree structure will be promoted by a high casting speed.” (p. 473, col. 1, first para.).
- 4) Brusethaug notes that “wide fir-tree zones also appear at low casting speeds suggesting that other factors in addition to casting speed and Fe and Si content influence the formation of fir-tree-zones.” (p. 473, col. 1, second para.).
- 5) Brusethaug reports that in a comparison of two sheet ingots containing 0.26% Fe and 0.13% Si, cast at a speed of 90 mm/min, “fir-tree zone was only observed in the ingot with a grain refiner addition.” (p. 473, col. 2, first para.).
- 6) Brusethaug discloses that “[c]asting speed and Fe/Si ratio are clearly dominating parameters regarding the fir-tree zone formation.” (p. 473, col. 2, second para.).
- 7) Brusethaug also reports that the testing results “suggests that both grain refiner addition and the B/Ti ratio influences the fir-tree zone formation.” (p. 474, col. 1, second para.).
- 8) Sawada discloses a method for producing an Al-Fe-Si alloy planographic printing plate. (Abstract).
- 9) A DC method may be used to produce an aluminum cast ingot (col. 5, ll. 6-8) which is subsequently subjected to rolling and graining (*see, e.g.*, col. 3, l. 42-col. 4, l. 12).

- 10) Sawada teaches that “in order to obtain an excellent property for a support for a planographic printing plate, the Fe component is $0 < \text{Fe} \leq 0.20$ weight %.” (col. 5, ll. 23-25).
- 11) According to Sawada, the inventors found that “streaked unevenness caused in electrochemical graining was due to a difference of concentration distribution of Fe,” which could be reduced by using the Fe component in the range of $0 < \text{Fe} \leq 0.20$ weight %. (col. 5, ll. 42-48).
- 12) Sawada’s alloy contains a Si component in the range of $0 \leq \text{Si} \leq 0.13$. (col. 5, ll. 56-57).

PRINCIPLES OF LAW

- 1) The Examiner bears the initial burden of establishing a prima facie case of obviousness. *See In re Rijckaert*, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993).
- 2) To satisfy this burden, the Examiner must provide a detailed analysis of the prior art and reasons why one of ordinary skill in the art would have possessed the knowledge and motivation to make the claimed invention. *See In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006).
- 3) Where all the elements of an invention can be found in a combination of prior art references, a proper analysis under § 103 requires, *inter alia*, consideration of two factors: (1) whether the prior art would have suggested to one of ordinary skill in the art that he should make the claimed composition or device, or carry out the claimed process; and (2) whether the prior art would also have revealed that in so making or carrying out, one of ordinary skill would have a reasonable

expectation of success. *In re Vaeck*, 947 F.2d 488, 493, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991).

- 4) "A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant." *In re Gurley*, 27 F.3d 551, 553, 31 USPQ2d 1130, 1131 (Fed. Cir. 1994).

ANALYSIS

The Examiner's position is that one of ordinary skill in the art would have been motivated to apply the steps of rolling and electrograining as taught by Sawada to the rolling ingot taught by Brusethaug in order to prepare a printing plate. (Answer 3-4). Appellants argue that Sawada expressly states that the alloys used in its method should have an Fe content no greater than 0.20 weight % and, therefore, teaches away from using Brusethaug's grain-refiner-free ingot which contains 0.26 weight % Fe and 0.13% Si. (Br. 7; Reply 3). As pointed out by Appellants, the Examiner has failed to explain why, given this apparent teaching away from using an ingot containing 0.26 weight % Fe, one of ordinary skill in the art would, nonetheless, have had a reasonable expectation of success in using Brusethaug's grain-refiner-free ingot in Sawada's process.

CONCLUSION

For the foregoing reasons, we conclude that the Examiner's findings are not sufficient to establish a prima facie showing of unpatentability under 35 U.S.C. § 103.

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ORDER

The final rejection of claims 19-26 under 35 U.S.C § 103(a) as unpatentable over Brusethaug in view of Sawada is reversed.

REVERSED

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